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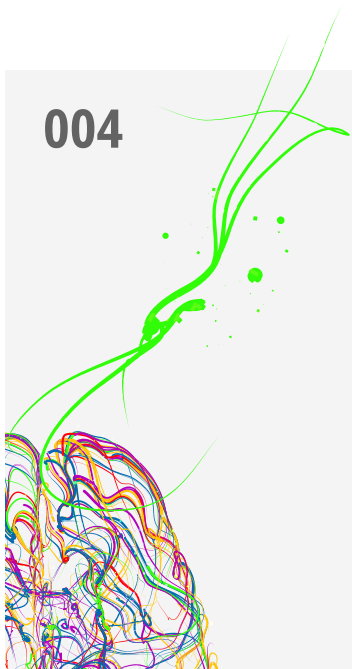
The Future of Finance Is Now.

The finance industry is at a critical juncture and financial institutions are navigating through unprecedented change. At this tipping point, it is clear that the future of finance is now. SIX has proven capabilities to deliver for our clients, ensuring continuous innovation, maintaining stability and providing fresh thinking.

Visit us at [six-group.com/future-finance](https://www.six-group.com/future-finance)



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SECURITIES SERVICES

Javier Hernani, Head Securities Services, explains how SIX is defining today what tomorrow's approach to securities is going to be – across the entire value chain.

The infrastructure of SIX ensures access to the capital market and the flow of information and money worldwide. As the operator of the Swiss stock exchange and the Spanish exchanges, we combine listing, trading, settlement, and custody of securities in one place. And with SIX Digital Exchange, we are defining the Securities Value Chain of the future. As a competence center for Swiss payment transactions, SIX supports banks with innovative services in an increasingly digitalized world. Moreover, we provide the entire world with reference, pricing, and corporate action data, regulatory services, and indices.

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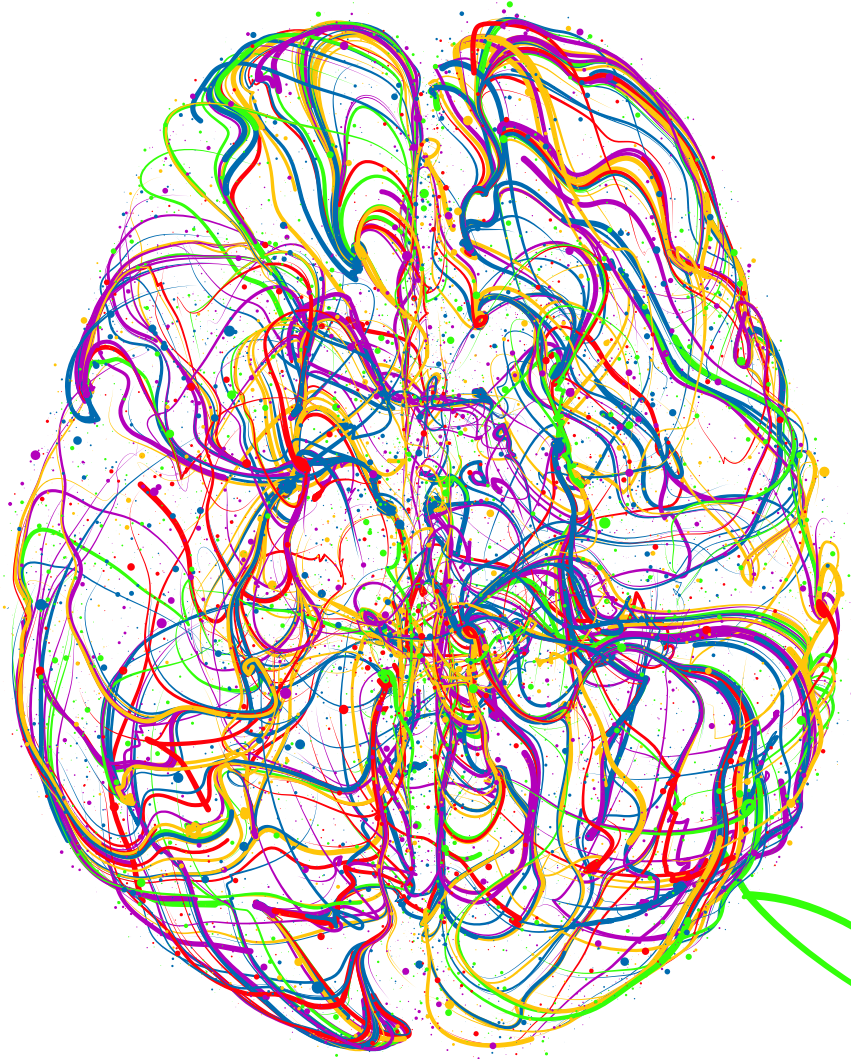
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When Emotional Investment Is a Bad Thing

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Obviously, investors have an objective: returns. But that's not the only thing that counts. You also have to feel comfortable with your investment strategy. Investing isn't an exact science. Our investment decisions are governed by psychological factors.

Who knows where this IT student got the inspiration from when ten years ago he borrowed a couple thousand francs to invest in Bitcoin – for less than a dollar apiece. Today he's a multimillionaire, with a diversified portfolio, and is working toward his PhD under Dr. Thorsten Hens, professor of financial economics at the Department of Banking and Finance at the University of Zurich. "That was brave of the young student," says Hens, "because from a purely scientific perspective it wasn't really a smart investment, and definitely not a balanced one."

It's well known that it's the exceptions that confirm the rule. The imprudent behavior paid off, and in any case the IT student had avoided the biggest mistake that you can make when investing – not investing at all. The second-biggest mistake, according to Hens, is getting out too early. Many an investor has gotten in when times were rosy, and then got cold feet when dark clouds rolled in. Hens reveals one rule of thumb up front: "Sell only when you need the money. Never ever sell when the market's down, even if your emotions tell you to."

And that takes us to the thick of it regarding the psychology of investing. Our investment decisions are heavily determined by psychological factors such as greed and fear. Greed can arise when I make a moderate return, and everyone around me is becoming filthy rich with Bitcoin. I wind up tempted to make up for it, and increase the risk. Fear arises when equity prices take a hit and the media

"You need a plan, a strategy, to avoid becoming a plaything for these psychological factors, and a victim of your emotions."

Prof. Thorsten Hens, PhD, University of Zurich

accentuates that fact with horror stories. I lose sight of the long-term objective and want to sell. "Profits are seen as normal, while losses are viewed as a warning sign," says Hens. "Losses motivate investors to act. That's why in declining markets there's much more trading activity than in rising markets."

Women Are Traditionally More Risk-Averse than Men

Psychological paradigms are behind the relative risk tolerances of investors. People who are open to new things or are extroverted show a greater risk appetite. Those who are cautious or neurotic show a lower risk appetite. One's own life experience also influences risk appetite. Reflected in terms of an "investor life," that means that the recurring up and down of the markets makes you more injured, or risk-tolerant, while a traumatic experience such as a complete loss has the opposite effect.

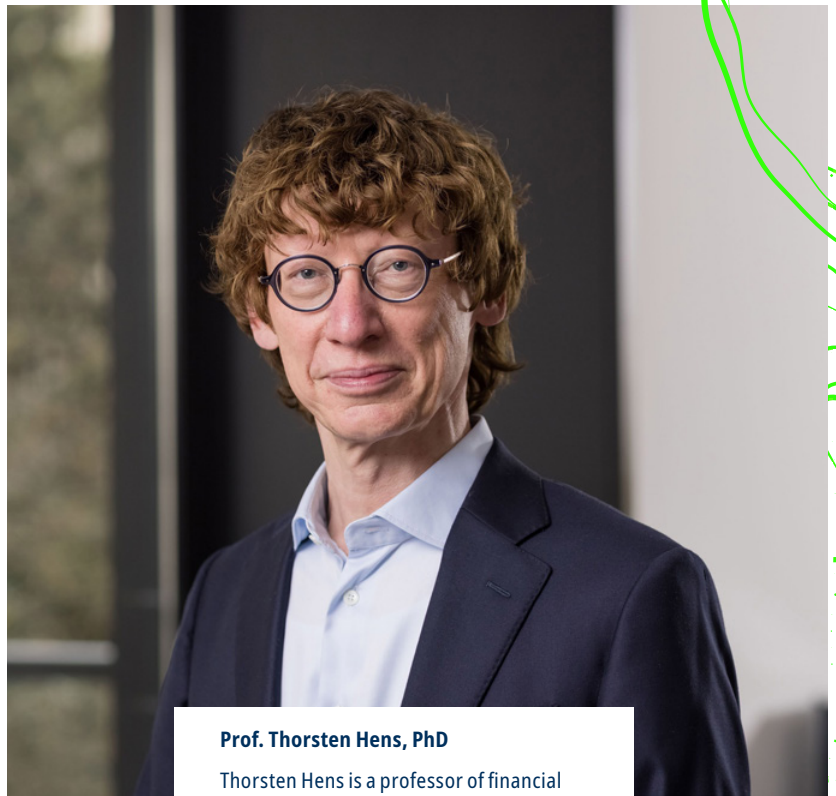
One's own culture also has an influence, says Hens. "In Australia there's a tendency toward impatience, and the Swiss often have a home bias, i.e., they >

have the tendency to have a disproportionately large portion of their financial investments in their home market.” And there are gender-specific differences as well: “Women are traditionally more risk-averse than men, and prefer to invest in tangible assets such as real estate or gold, rather than financial investments like equities or bonds. There’s also a tendency for both men and women to be backward-facing instead of forward-looking – to do precisely what would have been best to have done in recent weeks, and not what would be good for the future.

The Plan Needs to Be the Right Fit

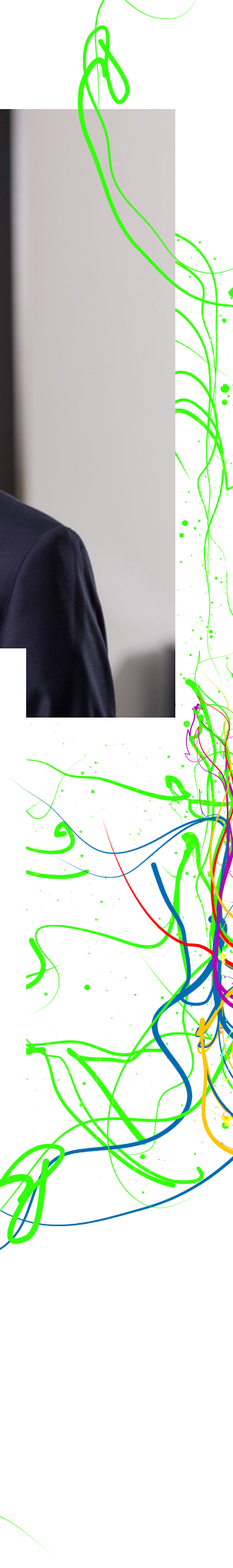
Believing that you’re always able to do the right thing at the right time is thus a fallacy. “You need a plan, a strategy, to avoid becoming a plaything for these psychological factors, and a victim of your emotions,” says Hens. An investment strategy is successful over the long term when it suits your personality: “A lot of strategies work, but you have to ask yourself, ‘What suits me – and how do I measure success?’” Typically, after ten years, women earn a lower return than men. But is a high rate of return always the objective? Some investors are after higher returns, and are willing to accept significant market fluctuations, while others are satisfied with lower returns in exchange for being able to sleep at night knowing the fluctuations won’t be as great.

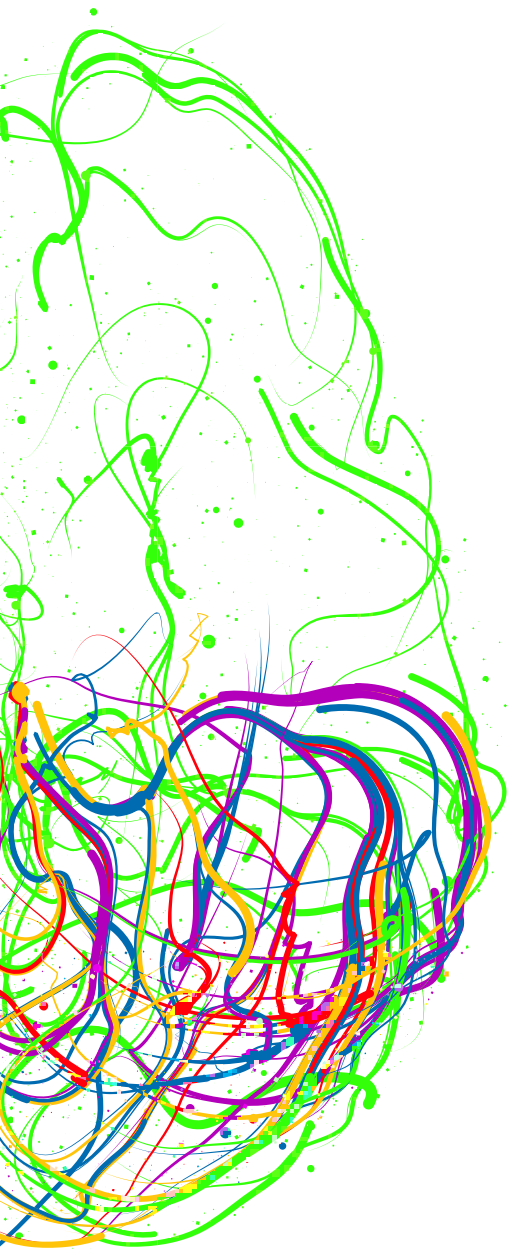
Investing isn’t purely a mathematical task. “Investing is a test of character,” says Hens. Investors discover a lot about themselves. They learn to emerge from crises stronger, and learn how to keep their nerve. But you also get to experience the sweet poison of success, which entices you to become too optimistic, overconfident. “From a psychological



Prof. Thorsten Hens, PhD

Thorsten Hens is a professor of financial economics and vice-director of the Department of Banking and Finance at the University of Zurich. He holds, among other designations and titles, a fellowship at the Swiss Finance Institute and is a partner at Behavioural Finance Solutions, a spin-off of the University of Zurich. It consults with financial companies, advising them on how to implement insights gained in the field of behavioral science. Hens’ areas of study include evolutionary and behavioral finance. In researching how investors make their decisions, Hens draws on work done in the field of psychology, and applies findings from biology in order to understand the dynamics driving decision-making in the financial markets.





standpoint, that's the crux," says Hens. "When everyone's celebrating, you have to be careful, and when everyone's wailing, you have to be bold." Over the long term, you're better off to swim against the flow. But you've got to have the personality to do so.

An investor needs a strategy that they feel comfortable with, one that fits with their risk tolerance and objectives, and takes the capital and investment horizon into account. Proven investment strategies abound: Value, Growth, Index, Trend, as well as Buy and Hold investing. Each strategy has both advantages and disadvantages. There is no perfect strategy. That doesn't matter, says Hens. These and many other investment strategies have been successful in the past. "Looking at the investment strategies to have hit the markets in the past 25 years, we see that the difference between the worst return of 8.58% and the best return of 11.51% over the entire period was "just" 3% annually. Moreover, in the next 25 years this difference could just as easily be gained back by the strategy that had performed the worst in the first 25 years. You can never predict these things."

Anything Is Better than Saving

In other words, the question as to which strategy to choose is relatively unimportant in comparison with the psychological risk associated with the two biggest investing mistakes mentioned earlier – not investing at all, and cashing in too early. That's because if I get out during a crash, my loss will probably be too great to make up for in the years that follow. That is why it's so important, says Hens, to select a strategy that you can stick to: "It's like being married – marry the person who you want with you through thick and thin. Changing constantly is too expensive." In any case, all proven strategies are better than leaving >

RED

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the money sitting in a savings account. In the last 500 years, there was only one decade in which equities were a losing proposition – between 1929 and 1939.

Robots Instead of Gamblers

Having an investment strategy has become even more important in the era of digitalization. Without one, there's the danger of thrashing around in a constant flood of information. The turbulence surrounding GameStop shares is an impressive example of how social media, in this case Reddit, can steer the behavior of investors. Hens is convinced that the frequency and overabundance of information has a rather negative influence on investing: "At any one time there's X amount of information indicating that you should buy, and just as much info that supports selling. In the end, you make the decision based on your mood." You don't have to know everything if you have a long-term strategy.

While new communications technologies can be a curse at times, robot

technology or artificial intelligence could count as a blessing. At financial institutions, robots can take care of routine work like customer surveys more quickly. During the actual consultation session, the chemistry or psychology between the advisor and the client has to be right. That's hard to do with a machine, says Hens. People would rather place their trust in other people than in machines.

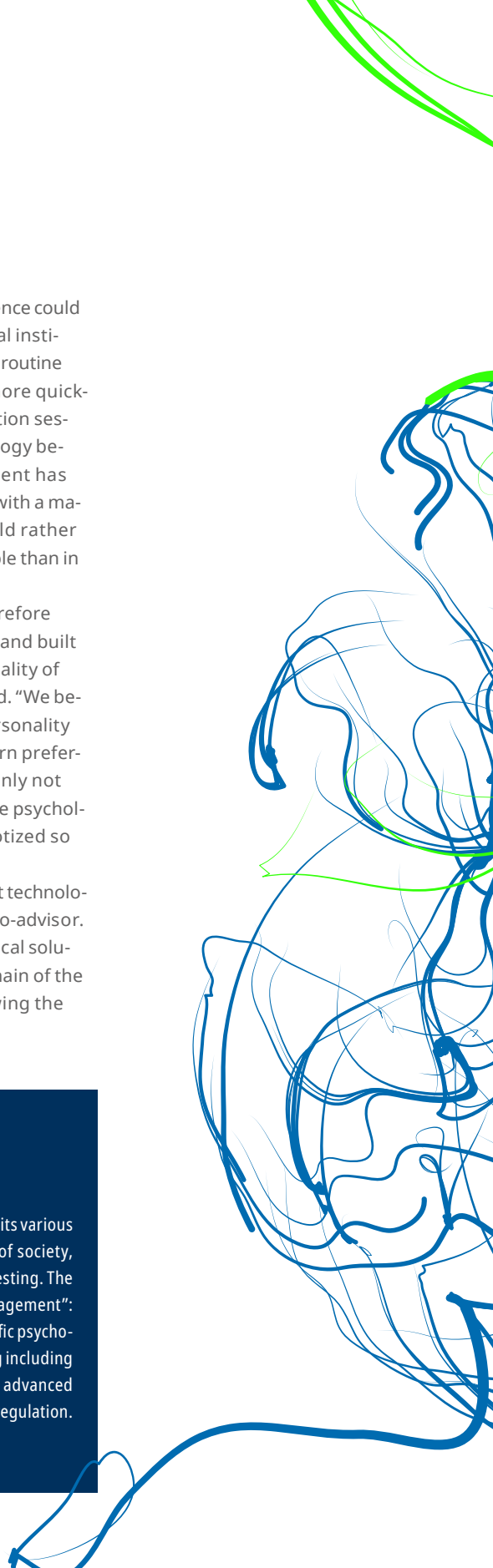
In his latest project, he therefore stood the process on its head and built a robot with which the personality of investors could be investigated. "We begin with the psychological personality and not just with the risk-return preferences of the client, and certainly not with the product features." The psychology of investing is being robotized so to speak.

BME Inntech also uses robot technology, and recently launched a robo-advisor. BME Inntech offers technological solutions along the entire value chain of the financial markets, and, following the

Discover Your Own Investment Style with the Instituto BME

The Instituto BME is the training center of BME Spanish Exchanges, now part of SIX. With its various courses on financial knowledge, the institute promotes financial culture in all levels of society, both nationally and internationally. In doing so, it also delves into the psychology of investing. The institute offers, for example, a course titled "The Psychology of Trading and Money Management": Participants learn how to develop their own investment style by taking into account specific psychological elements and learning how to contain emotional impulses. In addition to training including licensing for traders, the course offering of the Instituto BME includes education and advanced training in areas ranging from the financial market and financial products to FinTech and regulation.

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“Investing is a test of character.”

Prof. Thorsten Hens, PhD, University of Zurich

takeover of BME Spanish Exchanges, now belongs to SIX. The robo-advisor allows financial institutions to optimize investments of their customers. It uses an entertaining game in order to identify their preferences and prior knowledge. It's the same principle that, for example, Netflix uses: The robo-advisor displays a variety of investment options from which the customer can choose, based on how attractive they might be. Building on that, it suggests suitable investment options.

Berta Ares, Head BME Inntech, is confident that intelligent robo-advisors will become an integral part of tomorrow's investment world: “If everyone's using them but me, I'll be losing money – and just gambling,” she says.

A 100% Return over Eight Years

Gambling is also a no-go for the 15 students that Hens recruits from a pool of 300 each year. In groups of five, they have a year to manage a portfolio provided by a sponsor. Eight years ago, the first groups started with three million francs. That sum has since grown to six million. A 100% return over eight years isn't too bad. In the process, the students aren't allowed to rely on any already-established strategies. Anyone could do that. They have to devise something new, something from which in a few years' time new strategies might be developed, and become tried and true. Thereafter, we normal investors will be happy to rely on the strategy that best suits our personality. x

The Advantage of Competition

Charles Darwin long ago recognized how essential competition is to the survival of a species. Economist John Maurice Clark viewed competition as a prerequisite to economic growth and technological advancement. Competition doesn't just vitalize business, but also spurs athletes to ever greater heights of achievement.

Three different perspectives show that the principle of competition is fundamentally unrivalled.





Zurich Zoo curator Dr. Pascal Marty is an expert on wild animals and how to care for them properly in captivity. The biologist, specialized in primatology, has headed the zoo's Public Relations department for about a year now.

The Ape Whisperer

"In the animal kingdom, competition is synonymous with struggling to produce the most offspring. Those animals that excel at finding food and mating partners, both scarce resources, are the ones that prevail. This natural selection is a defining principle of evolution. At the zoo, we can deliberately eliminate competition for resources by providing all of the animals with sufficient nourishment. To avert conflicts over mating partners, we often keep only one male per species. For some species, we simulate natural selection with the help of international studbooks. This means that only certain particularly suitable animals are allowed to procreate. There is also competition between species. For example, in our Lewa Savanna compound with its seven different animal species, we have to make sure that there are many different feeding sites. Otherwise, the rhinoceroses would monopolize the food. In nature, numerous animal species have found their ecological niche after millions of years. Koalas, for instance, don't have to fear much competition for eucalyptus leaves."

The Olympian

"As a sport climber, I pit myself against others. Competition makes me better because I can learn from defeats. Afterward I ask myself how my opponent outdid me. Back when I was a kickboxer, I tried to exploit my opponents' weaknesses. In the sport of climbing, I try to benefit from my opponents' strengths because essentially we all have the same adversary: the wall. It even goes so far that we view the route together and give each other tips before the final of a bouldering competition. During the competition, though, we have to go to an isolation area. I don't get to see how my opponent climbed until I study it on video at home. It's different in speed climbing on identical routes set side by side, where I sprint up the wall in a matter of seconds. Spying my opponent out of the corner of my eye gives me an extra boost in speed climbs. The duel already begins beforehand. By psyching myself up and striking a self-confident pose, I build up body tension that enables me to summon my full power reserves when the starting gun sounds."



Sport climber Petra Klingler won the 2016 World Championship in bouldering, i.e. climbing without ropes. At the 2021 Olympic Games in Tokyo, she'll represent Switzerland in a newly instated discipline that combines bouldering, lead climbing, and speed climbing.



Christian Reuss has been with SIX for 12 years and has headed SIX Swiss Exchange since October 2020. In this role, he prepared SIX for the return of competition to Swiss equity trading, which had been suspended since 1 July 2019 for political reasons, causing almost all trading volume to shift to Switzerland's domestic exchange.

The Market Leader

"The Markets in Financial Instruments Directive, in force since 2007, aimed to stimulate stock-market trading in Europe by fostering competition. This consistently worked, with one exception: Trading in Swiss stocks between July 2019 and January 2021 took place almost exclusively on the Swiss stock exchange as a result of political disagreements between the Swiss Confederation and the European Union. So, it seems almost logical that another political decision – Brexit – led to a resumption of competition on 3 February 2021. But during the intervening period, it felt as though the Swiss stock exchange never stopped striving to prove itself in the competitive arena. We offered our clients new functionalities and showed market participants the merits of concentrating liquidity in a single trading venue: It results in greater efficiency, larger trading volumes at the best price, and stronger resistance to external shocks such as the COVID-19 crisis. And now we're looking forward to starting to promote the Swiss market again together with our competitors."

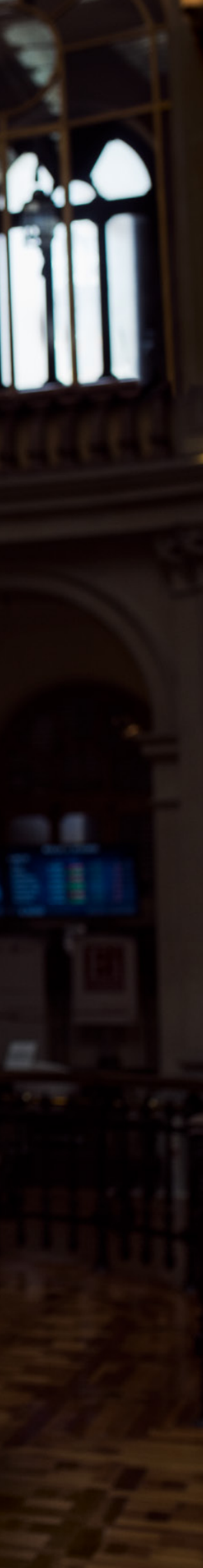
“Markets with Changing Conditions Are an Ideal Target Area”

Interview: Matthias Bill

Javier Hernani

Javier Hernani has headed the Securities Services business unit at SIX since January 2021. He became the head of BME Spanish Exchanges in June 2017, after seven years as a director general and another eight years as CFO. Hernani holds degrees in economics and business administration from the Universidad Comercial de Deusto and in European studies from the College of Europe in Bruges. Before joining BME in 2002, he served as the deputy general manager of Bilbao Stock Exchange. Hernani previously worked as a European financial sector consultant at Coopers & Lybrand in Brussels, and as the CFO of Spanish brokerage Norbolsa.





Javier Hernani, Head Securities Services at SIX, takes stock in an interim review after his first few months in office. He explains that securities services are more than just post-trade services, and points out the opportunities that an industry in a constant state of regulatory change presents.

You have been in charge of the Securities Services business unit at SIX, which comprises, among other things, the post-trade service offering in Switzerland and the one from BME Spanish Exchanges, since the start of 2021. How well are the Swiss and Spanish cultures coalescing?

Everything, in fact, is going smoothly. Although they come from countries with distinct differences, our Spanish and Swiss employees – not just within our business unit, but also across the entire company – are very cooperative and show respect and understanding for each other’s needs and cultural backgrounds. This is crucial to truly coming together as a team.

We are making strenuous efforts to help our employees get acquainted with their colleagues’ customs and even the languages they speak. And one day it will become possible again to travel back and forth between Switzerland and Spain, and to work together in person.

From a business standpoint, we have created a joint organization whose goal

is to continue providing top-notch services and to grow. We are now looking at synergies with that objective in mind.

SIX and BME each have their own clearing house and their own custody offering. Where do you see the greatest possibilities for synergies between the central counterparties (CCPs) and central securities depositories (CSDs)?

As I said, we want to grow, but we also want to optimize our cost base. This means exploiting synergies on both the revenue and expense sides. But it’s also about seizing new business opportunities. In other words, our overarching objective is to boost efficiency, quality, and innovation across the entire value chain, and to enhance our ability to compete by standardizing some of our internal processes.

Both CCPs are very diversified, offer services for numerous asset classes in a highly regulated environment, and manage risks in real time. SIX x-clear and BME Clearing both rank among the most qualified, stable, and best-capitalized CCPs in Europe. SIX x-clear, for example, has just been awarded the title of Clearing House of the Year at the Trading & Tech Awards hosted by *Financial News*. We will use our strong position and our longstanding client relationships in both countries to engage in cross-selling.

There are also synergies between the CSDs. We are working on a link between SIX SIS and Iberclear. This will allow us to offer Spanish securities to Swiss clients and Swiss securities to Spanish clients – and it will open up a broad range of new >



“We will use our strong position and our longstanding customer relationships in both countries to engage in cross-selling.”

business opportunities. In addition, Iberclear is connected to several Latin American markets, which we can now easily access for the Swiss market as well.

You mentioned strong positions in the Swiss and Spanish markets. But when it comes to growth in the post-trade space, this can only mean thinking globally. What do the plans here look like?

One primary goal for the post-trade space and thus for our Securities Services business unit is the same as for the other business units at SIX: to grow. In the context of our strategy, more growth also means deeper reach alongside greater volume. We want to extend and broaden the reach of our products and services by supplying them more widely internationally and by developing new products and services for clients in markets that we already cover.

The combined strengths of SIX and BME, and the resulting further enlargement of our know-how, enable us to continue rolling out innovations to that end. Markets with changing conditions, due to new regulations for example, are an ideal target area for us.

As a result of Brexit and the mutual recognition of stock exchange equivalence between Switzerland and the UK, exchanges in London resumed hosting trading in Swiss stocks on 3 February 2021. Recognition of stock exchange equivalence between Switzerland and the EU has not yet been reestablished. How does the regulatory landscape look in the post-trade space?

The regulatory landscape in the post-trade space is not affected by the decision regarding exchange equivalence. Our Swiss CCP operates in both the EU and the UK. In the EU, SIX x-clear supplies its services under third-country recognition pursuant to EMIR, the European Market Infrastructure Regulation – authorized by ESMA, the European Securities and Markets Authority. SIX x-clear can continue providing its services post-Brexit to its clients in the UK under the Temporary Recognition Regime. This regime, granted for two years, can be extended by the UK authorities while the formal authorization process is progressing. Continuous operation is thus guaranteed.

SIX SIS, our CSD domiciled in Switzerland, can continue to supply its services in the EU based upon a grandfathering clause in the CSDR, the European Central Securities Depositories Regulation.

The Spanish infrastructure, by the way, operates in the UK also under the Temporary Recognition Regime.

Clearing, settlement, and custody form the core of our securities services. What other services do we offer beyond that?

We are positioned across the entire value chain [see Top 6, page 15]. Our post-trade offering of clearing, settlement, and custody is supplemented, for example, by our global fund services, which provide a single-source solution for all mutual fund transactions, and by our issuance services, which assist issuers in registering new financial instruments.



SIX Provides Securities Services

across the Entire Value Chain

#1 – Clearing

We act as a central counterparty for securities transactions of all kinds in a highly regulated environment, ensuring effective risk management in real time.

#2 – Settlement and Custody

We settle more than 60 million transactions per year in over 50 markets and hold 6 trillion individual securities in custody.

#3 – Securities Finance

We bundle liquidity and collateral management functions, and provide direct access to central bank money, money from commercial banks, and the primary market for Swiss National Bank money market instruments.

#4 – Tax Services

We help financial institutions to avoid double taxations for their customers and to comply with tax reporting requirements.

#5 – Trade Repositories

We help market participants fulfill their reporting obligations for derivatives across different legal jurisdictions.

#6 – Additional Services

We continually invest in new technologies and develop innovative solutions for the financial centers in Switzerland and Spain. One example is RENADE, the Spanish registry of greenhouse gas emission rights.

Under our tax services offerings, we take over all the process steps ranging from the filing of market-specific tax forms, to coordination and reconciliation with tax authorities, and the securing of tax refunds. We particularly help avoid double taxation and facilitate the reporting in connection with taxes. Our trade repositories facilitate the reporting in connection with derivatives.

I would like to mention our real-time securities finance offering more at length. We ensure continuous liquidity on the market by securing access to central-bank money and money from commercial banks. To do that, we operate a fully automated trading platform in Switzerland for the secured money market, the market for short-term lending between financial institutions. Some 160 banks and insurance companies take part in this repo market, including the Swiss National Bank, which uses it to steer the Swiss money market.

In our role as a triparty agent, we monitor repo transactions and execute the collateralization fully automatically. On a related note, our introduction of the Collateral Cockpit in November 2019 has freed our clients almost entirely from having to intervene manually in back-office and risk management processes.

This last example shows that we never grow tired of developing innovations that today shape the securities landscape of tomorrow. x



Simone Kobel
Senior Assistant Swiss
Finance Museum, SIX



Podcast: six-group.com/finanzmuseum-1920s-red
(only in German)

Were the Golden Twenties Really That Glamorous?

In light of the COVID-19 situation, we at the Swiss Finance Museum created our first-ever digital exhibition. Our website whisks you away to the 1920s – via a podcast, among other means. In it, economic historian Tobias Straumann explains that the Golden Twenties didn't turn out to be so glamorous. The oft-cited boom didn't come until the second half of the decade, when consumer indulgence returned. And there were still major distortions. The market crashes in Germany and the USA come to mind. It's interesting to hear the parallels that Tobias Straumann makes with the 2020s. Without giving away too much, the similarities – the Spanish flu aside – are fewer than widely assumed.



Blog series: six-group.com/tfofin-blog-red

The Future of Finance Is Now

Profound structural change has brought the global financial industry to a critical juncture. The models underlying all market segments are changing almost daily. To continue holding their ground in the future, financial services providers must take action today to harness the potential of new technologies. Internal and external financial industry experts address precisely this subject in our blog series titled *The Future of Finance Is Now*. A good place to start reading today is with the first blog post by Stephan Sigrist. The founder and director of the think tank W.I.R.E. lists three competencies that forward-thinking financial services providers need to master before becoming true transformers.



Claudia Holfert
Head External & Digital Communications,
SIX



Video: six-group.com/qr-cash-red

How Withdrawals via Smartphone Work



Pascal Egger
Product Manager Cash Ecosystem,
Banking Services, SIX

As a result of modified hygiene practices due to COVID-19, contactless payment has surged – this also includes paying by smartphone. Wallets aren't really necessary anymore. But what if you need cash on occasion? The first banks are already allowing you to use mobile banking apps to withdraw cash from ATMs via QR code – contactless in this case too. Our video shows you how it works. Incidentally, you can also share the QR code with family or friends so that they, in turn, can withdraw cash. With the QR code, SIX enables banks to also assist customers with cash, even in cashless branches.

SIX, as a thought leader, initiates dialogue with all players in the financial industry. Our employees share their knowledge in a wide variety of ways.

Keyrock

🌐 keyrock.eu

Headquarters: **Brussels, Belgium**

Founded: **2017**

Employee headcount: **48**

Sector: **capital markets**

Keyrock has been participating in the F10 Zurich incubation program and is receiving support from SIX FinTech Ventures.

SIX is the founder and a corporate member and main sponsor of the F10 FinTech Incubator & Accelerator and operates its own corporate venture capital fund through its SIX FinTech Ventures entity.

🌐 f10.global

🌐 six-group.com/fintech-ventures

We are convinced that digital assets will be the only ones still traded on all trading venues a few years from now. Trading venues for digital assets are already multiplying exponentially today as an alternative to traditional stock exchanges, but they are fragmented due to their decentralized nature, which causes liquidity problems. This is all the more problematic because liquidity is becoming ever more important for all trading participants and will be needed in an unprecedented magnitude. That's why we have developed scalable, self-adaptive algorithmic technologies for stock exchanges and issuers that are capable of providing large-scale liquidity to ensure that the market for digital assets functions efficiently. We combine these technologies with a broad, standardized internal network composed of 80 trading venues.

Kevin de Patoul

Co-founder & CEO



Maximilian Spelmeyer

Senior Investment Manager,
F10 Zurich

WHY WE FIND THIS TOPIC RELEVANT

Using cryptocurrencies and tokenization to make illiquid assets freely tradable and accessible to anyone worldwide sounds promising. But cryptocurrencies and tokenization only solve the initial problem of tradability, not the problem of liquidity. Keyrock solves this latter problem by providing stock exchanges and issuers access to liquidity in a world of digital assets.

HOW HIGH WE ESTIMATE THE MARKET POTENTIAL

The market for cryptocurrencies and digital assets will grow tremendously, and the biggest hindrances to that growth are gradually being dismantled. SIX, with its SDX digital exchange, and other financial market infrastructures around the world are laying the cornerstone for the future.

WHY WE BELIEVE IN THIS STARTUP

When we got to know Kevin and his team during their time in the F10 Accelerator program, we were impressed by their drive, vision, and expertise and by the quality of their work. Clients as well as outside investors and experts universally praised the quality of the team, which acts as a trustworthy and reliable partner.

The experts at the F10 evaluate startups that have ideas and solutions for innovative services, that make processes more efficient, or that want to address new groups of customers.



Going to Great Lengths Far and Wide

Simon Brunner



2.4 meters wide, 2.6 meters tall,
6.1 meters long – with this container
everything is in perfect order.

Standards and norms are dull in name only. They enhance the quality of products and services and boost efficiency – and not just when shipping containers.

The Swiss newspaper *NZZ* once wrote that a world without international conventions “would instantly fall apart.” But despite their paramount importance, standards and norms lead a shadowy existence. So, it’s high time to shine the stage lights on them, provided that electricity flows. The International Electrotechnical Commission (IEC) has been setting global standards for electrical technologies since 1906.

The Geneva-based IEC, an organization with 173 member countries, can lay claim to having established almost 11,000 international standards. Its vast array of norms includes the well-known standby symbol, for example, as well as IP67 and IP68, the dustproof and waterproof protection classes for smartphones and the like. How do such standards get developed? We called up the IEC to ask. “It’s a fine art,” replies Gabriela Ehrlich, the head of communications at the IEC. “One mustn’t force innovations into compliance with a norm prematurely, or else there’s a danger of missing out on further innovative developments.”

But the opposite – waiting too long – is also hazardous. The IEC knows a lot about that. At the start of the 20th century, homes across many countries were electrified, but the power line manufacturers in each country developed their own electrical sockets and plugs. To this day, there are still 15 different systems in use around the world. This may delight the travel adapter manufacturing sector, but it continues to be a major nuisance for every other branch of industry and especially for tourists. “It would be incredibly expensive to retrofit electrical plugs and sockets,” Ehrlich explains. “I know of only three countries

“One mustn’t force innovations into compliance with a norm prematurely.”

Gabriela Ehrlich,
International Electrotechnical Commission

that have done something along this line: Saudi Arabia, Brazil, and South Africa.”

Everyone has been annoyed by different, incompatible plugs at one time or another, but very few of us likely ever face the awkward situation of having to verify the quality of a bulk shipment of instant coffee. Brewing up a sample cup without further ado doesn’t suffice to certify quality. Coffee merchants need an objective basis for discussing the quality of the product with suppliers, one that they can resort to as a reference in the event of litigation before a court. The International Organization for Standardization (ISO) provides that basis with its six-page ISO 6670:2002 norm titled “Instant Coffee – Sampling Method for Bulk Units with Liners.” The ISO had already developed a total of 23,850 such standards as of the time writing this article, and around four more are added every single day.

For Trucks, Trains, and Ships

The ISO arose in 1947 out of an organization that the IEC had founded for non-electrotechnical technologies two decades earlier. It has 165 member countries and is likewise headquartered in Geneva. The ISO’s container standard revolutionized global freight transportation. Some 90% of all ISO containers are 8 feet (approx. 2.4 m) wide, 8.5 feet (approx. 2.6 m) tall and either 20 (approx. 6.1 m) or 40 feet (approx. 12.2 m) long. They fit as easily on trucks as on trains and can be stacked by the hundreds on ships. And then there is the famous ISO 9001: There’s hardly a company above a certain size that >

can circumvent complying with the gold standard for quality management.

The examples above and below illustrate how standards enhance the quality of products and services, and boost the efficiency of the world economy. During the French Revolution, *Liberté, Égalité, and Fraternité* were naturally the decisive driver of standardization. The new universal system put an end to the arbitrariness of local governments, which had occasionally even imposed the local potentate's arm length as a unit of measure. The international prototype *meter* and *kilogram* supplanted 250,000 different units of length and weight.

Standards Can Extinguish Fires

Throughout history, however, it wasn't always noble motives that brought forth standards. For instance, in the 19th century, British engineers forced through the establishment of the ohm as the de facto standard unit of electrical resistance, thereby giving the empire global dominance in the telegraph industry. Something similar was achieved in around 1870 by oil tycoon John D. Rockefeller, who sold petroleum lamps in China that worked only with the petroleum that he exclusively sold.

This lock-in effect that creates dependence on a single supplier regrettably occurs repeatedly to this day in various industries. Fortunately, though, and thanks to numerous standards, it no longer occurs as dramatically as it did in 1904, when a devastating fire erupted in Baltimore in the US state of Maryland. Cities in neighboring states sent their fire engines to the scene, but their hoses didn't fit the local hydrants. The fire raged for 30 hours and destroyed 2,500 homes. ×

Switzerland's Financial Industry Defines Standards for Open Finance by Itself

Open finance, i.e. the exchange of customer data between financial institutions and third-party providers, is gaining traction worldwide, so the call for standards is accordingly loud. Unlike in the European Union, where the PSD2 directive sets certain compulsory guidelines, financial institutions in Switzerland can be part of the solution themselves without the need for a regulator. This requires, however, a "shared understanding of the legal framework and coordination across the industry," as the Swiss Bankers Association (SBA) recently wrote. The SBA therefore has defined institutional responsibilities and competences in collaboration with the Swiss FinTech Innovations (SFTI) industry association and relevant market participants. The SBA takes on a coordinating function while SFTI, together with other market participants, lays the groundwork for standardized application programming interfaces (APIs).

The new OpenWealth APIs prove the success of this approach. In December 2020, delegates from the wealth management industry reached an agreement on adopting communally shared APIs. SFTI incorporated them into its common API catalogue. The standards are managed and maintained by the OpenWealth Association, which was founded specifically for this purpose under the leadership of Synpulse together with the members St. Galler Kantonalbank, Zürcher Kantonalbank, Alphasys, Assetmax, Etops/Evolute, and SIX. The association selected the bLink open banking platform from SIX to operationalize the APIs, which supplement existing API offerings for accounting tasks. The benefit for financial institutions lies in scalability. Once they and third-party providers are on bLink, they can enter into partnerships with all other participants with little expenditure of time and resources. This, in turn, fosters the nationwide establishment of recognized API standards in the market.

Get regular updates on open finance and bLink in our newsletter (only in German):

📧 six-group.com/open-banking-monthly-red

HEADLINE

Euronext Stock Exchange mulling data center relocation from UK to Italy

London Stock Exchange also planning to migrate
to Telehouse facility in London's Docklands

March 18, 2021 By Dan Swinhoe

datacenterdynamics.com, 18 March 2021

The transformation of the financial industry is making headlines. Our employees explain how SIX is contributing to the future of finance.



Gregor Braun
Head Sales
Switzerland & Europe,
SIX Swiss Exchange

There's a lot going on these days. Industry portal datacenterdynamics.com recently reported that several major stock exchanges plan to relocate their data centers. In the wake of its acquisition of the Borsa Italiana, Euronext reportedly plans to move from England to Italy in the second quarter of 2022. London Stock Exchange likewise intends to leave the City in 2022 and plans to relocate to London's Docklands. And New York Stock Exchange and Nasdaq Exchange are both considering moving operations out of New Jersey to save taxes.

In this day and age, it no longer appears to matter where stock exchanges operate their data centers and where matching engines are sited and all trade orders are matched. Market participants who, for instance, earn their money through low-latency trading would disagree with this assertion, however. Speed ranks among the crucial factors for their trading success. Low-latency traders usually install their computer systems directly on the premises of a securities exchange's data center to keep the transmission path of orders as short as possible. So, if they wish to continue using the fastest possible connection, those market participants have no other choice than to tag along on the planned relocations.

Anyone devoting so much effort to securing speed should be consistently giving their business model some forethought. Low latency doesn't stop at the walls of the data center: Microwave, or radio frequency, technology enables information to be

transmitted between markets at the speed of light. Information sent via fiber optic cable takes around 13 milliseconds to make a round trip from the Swiss stock exchange to London and back. With microwaves, the same round trip takes only 5.5 milliseconds. Fiber optic cables rarely follow the shortest direct path. As proverbial data highways, they are routed along urban centers and have to cross rivers and detour around mountains. Microwaves, in contrast, make a beeline from point to point like an airplane.

Europe's Largest Microwave Network

SIX operates the largest microwave network in Europe and the second-biggest one worldwide through its subsidiary 12H, making SIX Swiss Exchange the only regulated stock exchange in Europe that enables all of its trading participants to register price movements and implement investment decisions as fast as the laws of physics allow. The microwave network currently connects Zurich with London, Frankfurt, and Milan, and links Milan with London and Frankfurt. SIX additionally is working together with Nasdaq Nordic to provide a microwave connection between London and Stockholm. SIX intends to further build out its microwave network and to offer other stock exchanges and market participants access to it – wherever their data centers end up relocating.

Contact us for further information on technical implementation details:

📞 six-group.com/microwave-red

**1.2 million
viewers**

CEO Talk is broadcast in prime time by the Swiss regional TV stations TeleZüri, Tele M1, TeleBärn, TVO, and Tele 1, which reach a combined audience of 1.2 million viewers each day.



TeleZüri Television Studio, Zurich, Switzerland

CEO Talk, a new business show that debuted in March 2021, brings the Swiss stock exchange closer to a wide audience. Broadcast by five regional TV stations in Switzerland, *CEO Talk* features discussions with prominent representatives of Switzerland's business community and financial industry each week.

Alongside CEOs and board members of companies listed on the Swiss stock exchange, *CEO Talk's* guests also include experts from SIX. "That way we can explain to a wide audience the important role that stock exchanges play today and in the future in our economy and for our prosperity," says financial journalist Martin Spieler, the host of *CEO Talk* (pictured right).

On the mid-April edition of the talk show, Thomas Zeeb (pictured left), who, as Global Head Exchanges at SIX, is in charge of SIX Swiss Exchange, BME Spanish Exchanges, and SIX Digital Exchange, explained how they bring companies and investor capital together through trading as part of their core function.

BULLISH

Our employees at SIX prove their toughness in the saddle – and in their specialty subject areas.

Working from Anywhere

Interview: Sibylla Rotzler

RED
024

“Do you think there’s a possibility of companies introducing a new global standard of Remote First?” Alina-Maria Weide posed this question to the audience at TEDxSIX, her colleagues. That’s because she is convinced that employees are more efficient working under flexible conditions and off-site. She is a Senior Product Manager at SIX, and has worked from home since her first day on the job in April 2020.

At TEDxSIX you talked about remote work. Is this a different concept than working from home?

Absolutely. When we talk about remote work, we’re talking about employees being able to do their work from anywhere – be it from home, a café, or co-working space. Remote employees utilize digital tools and technologies in the best possible way to organize their work and communication within the team in a way that’s efficient and makes good sense.

Why are you a firm believer in remote work?

I’ve worked remotely most of my career, and have travelled a lot. I always found it challenging to work in artificially created surroundings: They’re always the same, they don’t really foster much creativity, and they’re often loud. Why should we persist with old paradigms that are still geared

Rodeo Time

Alina-Maria Weide:

O S

Due to Covid-19, we had to hold off on the mechanical bull ride.

toward the 1920s? We've had the digital tools and infrastructure that have enabled us to develop for more than three decades.

So, what are the advantages for companies with this?

Studies show that working from home increases work performance and productivity, while reducing the number of sick days. A Harvard study in 2020 found that remote employees showed increased loyalty: The probability that they would quit their jobs sank by 50%. Flexibility allows employees to work at those times during which they are the most productive and creative. Moreover, when working remotely they can change environments and thus get inspiration when needed – be it from those around them, nature, or city life. Additionally, I'm convinced that companies that offer remote work have an easier time establishing employee loyalty, and attracting new talent – specifically, millennials and digital natives.

How has Covid-19 changed our view of the work environment?

Covid-19 spawned a lot of new ideas and viewpoints, and our everyday work has completely changed. We had to take stock of our values. What's really important? What are my constraints? But we also had the opportunity to consider what life can look like with more self-reliance, discipline, freedom, and more quality instead of quantity.

What motivated you to participate in TEDxSIX?

The notion behind TED, "Ideas worth sharing," is something that's fascinated me since I was in my twenties. I was, and

am, very thankful and excited that for just about every topic TED attracts people who can get to the heart of the topic in ways that are eloquent and pertinent. With a question that's close to my heart, I applied for TEDxSIX so that I could experience this for myself.

What would you like to see in the future?

I imagine office spaces increasingly becoming places where companies foster collaboration between employees, and where we can meet for workshops. The future is not a place that we have to go to, rather a place that we create for ourselves. We have to seize the opportunity and assume responsibility for the future so that we can continually improve our quality of life. We have to create a normalcy in which we can choose how, when, and where we work best.

“The future isn't a place we have to go to, rather a place that we create for ourselves.”



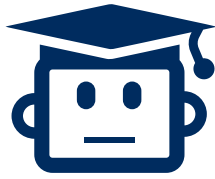
Alina-Maria Weide, SIX

TED – Ideas for the World

A TED conference sees leading movers and thinkers come together from around the world to share their wisdom – within an 18-minute time limit. TED stands for Technology, Entertainment, and Design, and can be traced back to Richard Saul Wurman, who observed a sharp convergence of these three elements in 1984. The non-profit organization aims to provide people around the world with a better understanding of global issues in the hopes of creating a better future.

In June 2006, six TED Talks went online, and within three months they'd been viewed over a million times – today, most talks are made available at no cost on TED.com. In the fall of 2012, TED Talks celebrated reaching their billionth view. It gets, on average, 17 new views per second. Incidentally, one of the most popular TED Talks features Sir Ken Robinson on the topic "Do Schools Kill Creativity?" Today, TED counts among the world's most important forums for an interdisciplinary exchange of ideas. TEDx got its start in 2009, thus opening the TED format for local independently organized events. At TEDx events, there's a combination of TED Talks videos and live speakers. On 23 March 2021, TEDxSIX took place – a completely digital event organized by employees from SIX for their colleagues in order to strengthen corporate culture.

© ted.com



SIX has been collaborating with the Massachusetts Institute of Technology (MIT) since 2021. Together, **MIT** and SIX want to explore new approaches around a data-driven future and strengthen the data science community. The first projects will focus on data protection (i.e. privacy-enhancing technologies) and sustainable finance, and will result in white papers, workshops as well as joint events.

“This clearly demonstrates that MARF supports companies in their quest for growth – even in times of crisis. And that, in turn, benefits the Spanish economy.”

Gonzalo Gómez, Head Fixed Income at BME, is pleased about another corporate bond listed on the Mercado Alternativo de Renta Fija (MARF). Inveready is already the sixth company in 2021 to issue a fixed-income security on the MARF, and the 100th in the market’s seven-and-a-half-year history. Congratulations on reaching this milestone.

2,160



Bancomats

According to a Senozon study commissioned by SIX, Switzerland would be optimally covered by a total of 2,160 Bancomats (ATMs run by banks) at 1,160 locations around the country. Some 90% of the populace would there be able to access cash, on foot or via public transport, within 20 minutes. This would see the current number of Bancomats reduced by two-thirds. Since 2015, prior to COVID-19, cash withdrawals have declined by 4.5% annually.



According to the latest Univer-sum Most Attractive Employer ranking, SIX is among the most popular employers among students in Switzerland. Among IT students, SIX, participating for the first time, succeeded in making the Top 40 of the ranking.

Approximately **12,000** students from **78** tertiary institutions participated in the ranking.

Welcome

New Listings on SIX Swiss Exchange

29 April 2021: PolyPeptide Group (PPGN)

12 May 2021: Montana Aerospace (AERO)

New Listings on BME

29 April 2021: Línea Directa

Aseguradora (LDA)

4 May 2021: Ecoener (ENER)

New Listings on BME Growth

25 May 2021: Adriano Care (YADR)

11 June 2021: Artech (ART)

22 June 2021: Parlem Telecom (PAR)

29 June 2021: Inbest VII (YINB7)

Our employees are experts in their respective fields, and they never stop furthering their education and skills. In the course of their doing that, the best inputs sometimes come from an unexpected direction.



Margarete Steiff Pioneer Toymaker and Entrepreneur

I, like lots of other people, was familiar with the stuffed animals manufactured by Steiff, especially the famous teddy bear with the button in its ear. But for a long time I didn't know anything about the fascinating story of the woman behind the company. That changed six years ago when my mother gave me a book about women who successfully went their own way. Margarete Steiff's iron will and entrepreneurial spirit have left a lasting impression on me ever since.

For a girl born in 1847 in southern Germany, a career like the one that Steiff built was anything but predestined, all the more so since she was struck by polio in her infancy. She was confined to a wheelchair very early on in life.

But Steiff's disability didn't deter her from fighting for her education. Against her parents' wishes, she persuaded her siblings and the children next door to take her with them to school, and a neighbor of the school carried her up the steps each day. And with the same dogged determination, she achieved true mastery as a seamstress. She couldn't operate the sewing machines of her day with her disabled right arm, but Steiff devised a proverbial workaround by rotating the positioning of her work equipment, which was cumbersome but functional. She sewed clothing, but also pincushions, this way. One day for fun, she sewed a pincushion in the shape of an

elephant. The world's first stuffed animal was thus born, and the rest is history.

I engage with history every day in my job as the director of the Swiss Finance Museum. And contrary to what you might think, it's not numbers, but rather stories like Margarete Steiff's that we put on exhibition. We also appeal to a young audience by presenting the anecdotes and people behind our collection of historical security certificates and by interactively explaining the complex processes employed in the financial industry. We consider it our mission to acquaint children and adolescents with the subject of how to handle money and to familiarize them with topics such as investing and planning for retirement through guided tours of the museum, workshops, and classroom initiatives.

Financial Literacy Is a Basic Skill

We pursued this mission more intensively on social media during the COVID-19 pandemic, and we, curated a digital exhibition on the roaring 1920s on our website, which includes a podcast featuring economic historian Tobias Straumann [see page 16]. The Swiss Finance Museum reopened its doors to the general public at the start of June 2021.

Whether online or offline, financial literacy is a vital basic skill that enables anyone to attain financial independence. Margarete Steiff accomplished that as an unmarried woman in the 19th century through the sheer force of her iron will.



Listen to Andrea Weidemann tell more anecdotes from the world of historical security certificates in our SIX Podcast.

📍 six-group.com/podcast-steiff-red



Andrea Weidemann
Director,
Swiss Finance Museum, SIX



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